AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS

1. (previously presented) A method for providing a timing reference signal in a network, comprising the steps of:

   a) receiving a timing signal at a source device;

   b) representing said timing signal as data capable of transmission in a network;

   c) transmitting said data representing said received timing signal in an asynchronous packet-based network from said source device;

   d) receiving a network packet containing data representing said timing signal at a target device; and,

   e) producing a synthesized timing reference signal, said synthesized timing reference signal being synchronized with said timing signal received at said source device by reference to said transmitted data at said target device.

2. (original) The method described in Claim 1, wherein at least a portion of said network is implemented as an Ethernet.

3. (original) The method described in Claim 1, wherein said received timing reference signal is a National Timing Standard Reference signal.

4. (previously presented) The method described in Claim 1, wherein a data format of said

data comprises a numerical value.

5. (original)The method described in Claim 4, wherein said numerical value is generated by a frequency counter.

6. (original) The method described in Claim 1, wherein said transmission of said network packet is accomplished at a controllable interval.

7. (original) The method described in Claim 6, wherein said controllable interval is capable of being controlled by data received back from said target device.

8. (previously presented) A method for synthesizing and synchronizing a timing reference signal in a network, comprising the steps of:

a) generating a constant-frequency signal at a target device;

b) generating data representing said constant frequency signal;

c) receiving a network packet containing data representing a timing reference signal at said target device from a source device that receives said timing reference signal;

d) extracting said data representing said timing reference signal from said network packet;

e) comparing said data representing said timing reference signal with said data representing said constant frequency signal; and,

f) adjusting said constant frequency signal based on said comparison of said timing reference signal and said constant frequency signal.

9. (original) The method described in Claim 8, wherein said timing reference signal is a National Timing Reference signal.

10. (original) The method described in Claim 8, wherein said timing reference signal is a constant 2.048 MHz.

11. (original) The method described in Claim 8, wherein said constant frequency signal is generated at 2.048 MHz.

12. (original) The method described in Claim 8, wherein said constant frequency signal is generated by a voltage controlled oscillator.

13. (original) The method described in Claim 8, wherein said comparison of said constant frequency signal and said timing reference signal results in an analog voltage.

14. (original) The method described in Claim 13, wherein said analog voltage is analogous to the difference between said constant frequency signal and said National Timing Reference signal.

15. (original) The method described in Claim 13 wherein said analog voltage is used as the basis for adjusting the output frequency of said voltage controlled oscillator.

16. (original) A method for minimizing bandwidth used in providing timing reference signals in a network, comprising the steps of:

a) receiving a timing reference signal at a source device;

b) transmitting data representing said received timing reference signal to a target device;

c) synthesizing a timing signal at said target device wherein said synthesized timing signal is synchronized with said received timing reference signal; and,

d) adjusting the rate of transmission of said data representing said timing reference signal by reference to a comparison of said timing reference signal and said synchronized, synthesized, timing signal.

17. (original) The method described in Claim 16, wherein said timing reference signal received at said source device is represented by numerical data.

18. (original) The method described in Claim 16, wherein said data representing said timing reference signal is inserted in an asynchronous network packet.

19. (original) The method described in Claim 16, wherein said synchronized, synthesized, timing signal generated at said target device is represented by numerical data.

20. (original) The method described in Claim 16, wherein said data representing said timing reference signal is compared with said data representing said synchronized, synthesized, timing signal generated at said target device for the purpose of determining the difference between said signals.

21. (original) The method described in Claim 20, wherein said difference is represented by numerical data.

22. (original) The method described in Claim 20, wherein said difference is a phase difference.

23. (original) The method described in Claim 20, wherein said difference is used as a basis for optimizing the rate of transmission of said data representing said timing reference signal from said source device to said target device.

24. (original) An apparatus for providing a synchronized, synthesized, timing signal in a network, comprising:

a source device for transmitting data representing a received timing reference signal;

a target device for receiving said data representing said timing reference signal and for synchronizing a synthesized timing reference signal to said timing reference signal; and,

a network for coupling said source device with said target device.

25. (original) A source device for transmitting data representing a received timing reference signal, comprising:

an element for receiving a timing reference signal;

an element for generating data representing said timing reference signal;

an element for generating an asynchronous network communication packet containing said data representing said timing reference signal;

an element for transmitting said asynchronous network communication packet;

an element for controlling the rate of transmission of said asynchronous network communication packet; and,

an element for extracting data from other asynchronous network communication packets.

26. (previously presented) A target device for receiving data representing a timing reference signal and for synchronizing a synthesized timing reference signal to said timing reference signal, comprising:

an element for receiving an asynchronous network communication packet;

an element for extracting said data representing said timing reference signal from said asynchronous network communication packet wherein said timing reference signal is received by a source device;

an element for generating a constant frequency signal capable of adjustment;

an element for generating data representing said constant frequency signal;

an element for comparing said data representing said timing reference signal with data representing said constant frequency signal; and,

an element capable of adjusting the output frequency of said constant frequency signal generating element.

27. (original) The apparatus described in Claim 24, wherein at least a portion of said network is implemented as an Ethernet.

28. (original) The apparatus described in Claim 24, wherein said timing reference signal is a National Timing Reference signal.

29. (original) The source device described in Claim 25, wherein said asynchronous network communication packet is implemented as an Ethernet packet.

30. (original) The target device described in Claim 26, wherein said asynchronous network communication packet is implemented as an Ethernet packet.

31. (previously presented) The apparatus described in Claim 26, wherein said element for generating said constant frequency signal is implemented as a voltage controlled oscillator.

32. (original) The apparatus described in Claim 26, wherein said element for comparing said data representing said timing reference signal with data representing said constant frequency signal is adapted to produce an analog voltage representing the difference between said timing reference signal and said constant frequency signal.

33. (currently amended) An apparatus for minimizing bandwidth used in providing timing reference signals in a network, comprising:

a source device for generating and transmitting asynchronous network communication packets containing data representing a timing reference signal:

a target device for generating a synchronized, synthesized, constant frequency signal; and,

a network for coupling said source device and said target device, wherein said timing reference signal is a National Timing Reference signal.

34. (canceled)

35. (original) The apparatus described in Claim 33, wherein said source device comprises an element capable of adjusting the rate of transmission of said asynchronous network communication packets.

36. (original) The apparatus described in Claim 33, wherein said target device comprises an element capable of transmitting asynchronous network communication packets containing data representing the difference between said timing reference signal and said synchronized, synthesized, constant frequency signal.

37. (original) The apparatus described in Claim 35, wherein said element capable of adjusting said rate of transmission is further capable of optimizing said rate of transmission by reference to data representing the difference between said timing reference signal and said synchronized, synthesized, constant frequency signal.

38. (previously presented) A computer-readable medium having stored thereon instructions for performing a method for providing a timing reference signal in a network, comprising the steps of:

a) receiving a timing signal at a source device;

b) representing said timing signal as data capable of transmission in a network;

c) transmitting said data representing said received timing signal in an asynchronous packet-based network from said source device;

d) receiving a network packet containing data representing said timing signal at a target device; and,

e) producing a synthesized timing reference signal, said synthesized timing reference signal being synchronized with said timing signal received at said source device by reference to said transmitted data at said target device.

39. (original) A computer-readable medium having stored thereon instructions for performing a method for synthesizing and synchronizing a timing reference signal in a network, comprising the steps of:

a) generating a constant-frequency signal at a target device;

b) generating data representing said constant frequency signal;

c) receiving a network packet containing data representing a timing reference signal at said target device from a source device;

d) extracting said data representing said timing reference signal from said network packet;

e) comparing said data representing said timing reference signal with said data representing said constant frequency signal; and,

f) adjusting said constant frequency signal based on said comparison of said timing reference signal and said constant frequency signal.

40. (original) A computer-readable medium having stored thereon instructions for

performing a method for minimizing bandwidth used in providing timing reference signals in a network, comprising the steps of:

a) receiving a timing reference signal at a source device;

b) transmitting data representing said received timing reference signal to a target device;

c) synthesizing a timing signal at said target device wherein said synthesized timing signal is synchronized with said received timing reference signal; and,

d) adjusting the rate of transmission of said data representing said timing reference signal by reference to a comparison of said timing reference signal and said synchronized, synthesized, timing signal.